

## Table of Contents

<b>Table of Contents .....</b>	<b>i</b>
<b>Section 1. Introduction .....</b>	<b>1- 1</b>
I. Preface .....	1-1
A. Document Overview.....	1-1
B. Department of Education (DOE) Facility Standards for Technology in New Jersey Schools - Background .....	1-1
C. New Document Goals .....	1-2
II. Intended Audiences and Use.....	1-2
A. School Design Team Participants .....	1-2
III. Critical Success Factors .....	1-4
A. Leadership & Vision .....	1-4
B. Professional Development.....	1-4
C. Technical Support and End-User Support .....	1-4
D. Effective Turnover of Facility .....	1-5
<b>Section 2. Vision and Design Elements .....</b>	<b>2- 1</b>
I. The Design Process.....	2-1
A. Design Process and Philosophy for Educational Spaces .....	2-1
B. Total Cost of Ownership (TCO).....	2-2
II. Revitalizing Learning Environments with Educational Technology .....	2-3
A. Educational Technology Advances .....	2-4
B. High Speed Connectivity .....	2-5
C. Ubiquitous Access to Computing Resources for Teaching and Learning .....	2-6
III. Guiding Trends and Assumptions .....	2-8
A. Moore's Law .....	2-8
B. IP Convergence .....	2-8
C. Power, Cooling and Space Planning .....	2-8
D. Wireless Impact in Educational Facilities and the Community .....	2-8
E. Protecting What Matters Most – Data and Physical Security Planning .....	2-9
F. Interactive Technologies .....	2-9
G. One-to-one Computing.....	2-9

H. Home/Remote eLearning and Virtual Learning .....	2-9
IV. New Role of Schools.....	2-9
A. New School Spaces for Evolving Roles .....	2-10
B. New School Spaces for New Literacies .....	2-11
C. Identifying Traditional and Non-traditional Activity Areas for New Audiences .....	2-12
<b>Section 3. School Construction Process .....</b>	<b>3- 1</b>
I. Design Input Matrix .....	3-1
A. Matrix Notes.....	3-1
B. Stakeholder Groups Defined .....	3-1
C. Educational Technology Design Process Input Matrix .....	3-3
II. Program/Concept Phase.....	3-4
A. Technology Related Deliverables.....	3-4
B. Who Should Participate.....	3-5
C. Who Should Review/Approve Deliverables .....	3-5
III. Schematic Design Phase .....	3-5
A. Technology Related Deliverables.....	3-6
B. Who Should Participate.....	3-6
C. Who Should Review/Approve Deliverables .....	3-6
D. IT Plan Issues .....	3-6
E. E-rate Program Considerations .....	3-7
IV. Design Development.....	3-8
A. Technology Related Deliverables.....	3-8
B. Who Should Participate.....	3-9
C. Who Should Review/Approve Deliverables .....	3-9
V. Construction Document Phase.....	3-9
A. Technology Related Deliverables.....	3-10
B. Who Should Participate.....	3-10
C. Who Should Review/Approve Deliverables .....	3-10
VI. Construction Administration.....	3-10
A. Submittal Process .....	3-11
B. Requests for Information (RFI) Process .....	3-11
C. Coordination among Contractors, Integrators, and Service Providers .....	3-12
D. Project Meetings .....	3-12

E. Periodic Site Visits .....	3-12
F. Testing and Training .....	3-12
G. Punch lists .....	3-13
VII. SDA Design Manual References .....	3-13
<b>Section 4. Administrative and Learning Environments.....</b>	<b>4- 1</b>
I. Administrative Environments .....	4-2
A. District and School Leadership Office Suites .....	4-3
B. Building and Grounds (HVAC, Security, Maintenance Areas, Roof, Parking Lots/Garages, Play Areas) .....	4-4
C. District-level Support Services (Transportation, Food Services, Data Centers) .....	4-6
D. School-based Student Support Services (Special Education/Student Services, Health, and Guidance) .....	4-7
II. Instructional Environments .....	4-8
A. General Classroom/Instructional Space Configurations .....	4-11
B. Wireless Networks in Support of Teaching and Learning .....	4-13
C. Ubiquitous Computing Strategies .....	4-13
D. Teacher Computing Resources .....	4-16
E. Specialist Areas (Music, Art, Video Production, Physical Education, Business Education, Technology Education) .....	4-18
F. Special Education .....	4-21
G. School-to-Work and Adult Education .....	4-22
H. Peripheral Devices in Support of Teaching and Learning .....	4-23
III. Shared Environments .....	4-26
A. Information Resource/Library Media Center .....	4-26
B. Distance Learning/Video Conferencing Environments .....	4-27
C. Video Production and Distribution Environments .....	4-28
IV. Large Group Environments.....	4-32
A. Auditorium/Theater.....	4-32
B. Cafetorium/Multipurpose Area.....	4-34
C. Gymnasium/Athletic Fields .....	4-35
<b>Section 5. Standards and Systems.....</b>	<b>5- 1</b>
I. Standards .....	5-1
A. Code vs. Standard - Definition .....	5-1
B. Compliance Codes Examples .....	5-1

C.	Additional Standards and References .....	5-2
D.	Applying Standards.....	5-4
E.	District Educational Technology Plan (3 Year Plan).....	5-4
F.	Specification Format – CSI Division 27 and 28 .....	5-5
II.	Communications Services and Systems .....	5-7
A.	Entrance Facilities .....	5-8
B.	Primary and Secondary Technology Spaces and Equipment Rooms .....	5-8
C.	Horizontal Cable .....	5-11
D.	Backbone Cable.....	5-12
E.	Cable Testing, Certification and Warranty .....	5-12
F.	Public Address & Clock Systems.....	5-13
G.	Physical Security Systems.....	5-13
H.	Audiovisual Systems .....	5-16
I.	Local Area Network (LAN) Systems.....	5-17
J.	WAN Systems.....	5-17
K.	Wireless Systems.....	5-18
L.	Building Management Systems (BMS).....	5-18
M.	Network Security.....	5-19
N.	Disaster Recovery (DR) and Business Continuation (BC).....	5-19
O.	Convergence .....	5-19
P.	IT Commissioning.....	5-20

## APPENDICES

<b>Appendix A.</b>	<b>- Acknowledgements.....</b>	<b>A- 1</b>
I.	Steering Committee .....	A-1
II.	Advisory Group Members .....	A-2
<b>Appendix B.</b>	<b>Articulated Literacies from ISTE and Partnership for 21<sup>st</sup> Century Skills....</b>	<b>B- 1</b>
<b>Appendix C.</b>	<b>State Technology Plan .....</b>	<b>C- 1</b>
<b>Appendix D.</b>	<b>IT Plan Sample .....</b>	<b>D- 1</b>
<b>Appendix E.</b>	<b>Design Samples and Drawings .....</b>	<b>E- 1</b>
<b>Appendix F.</b>	<b>Continuity of Student Learning and Core Operations Planning.....</b>	<b>F- 1</b>